

```
=> e WE43/cn
E1      1      WE34/CN
E2      1      WE42/CN
E3      1  --> WE43/CN
E4      1      WE43A/CN
E5      1      WE54/CN
E6      1      WE54A/CN
E7      1      WE56/CN
E8      1      WEA 03C/CN
E9      1      WEA 03G/CN
E10     1      WEA 05E/CN
E11     1      WEA 05E/S136/CN
E12     1      WEA 05E107B/CN
```

```
=> s e3
L1      1 WE43/CN
```

```
=> d
```

```
L1  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2008 ACS on STN
RN  145684-42-0  REGISTRY
ED  Entered STN:  04 Feb 1993
CN  Magnesium alloy, base, Mg,Dy,Er,Gd,Li,Nd,Sm,Y,Yb,Zr (WE43)  (CA INDEX
NAME)
```

OTHER NAMES:

```
CN  Elektron WE43
CN  Mg4Y3RE
CN  WE43
MF  Dy . Er . Gd . Li . Mg . Nd . Sm . Y . Yb . Zr
CI  AYS
SR  CA
LC  STN Files:  CA, CAPLUS, TOXCENTER, USPATFULL
```

Component	Component Percent	Component Registry Number
Mg	92	7439-95-4
Y	4	7440-65-5
Nd	2.2	7440-00-8
Zr	0.6	7440-67-7
Dy	0.3	7429-91-6
Gd	0.2	7440-54-2
Er	0.1	7440-52-0
Li	0.1	7439-93-2
Sm	0.1	7440-19-9
Yb	0.1	7440-64-4

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

```
91 REFERENCES IN FILE CA (1907 TO DATE)
91 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```

```
=> file caplus
COST IN U.S. DOLLARS
FULL ESTIMATED COST
```

```
SINCE FILE      TOTAL
ENTRY          SESSION
16.35          16.56
```

FILE 'CAPLUS' ENTERED AT 15:55:43 ON 07 FEB 2008
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FILE LAST UPDATED: 6 Feb 2008 (20080206/ED)

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=> d his

(FILE 'HOME' ENTERED AT 15:43:41 ON 07 FEB 2008)

FILE 'REGISTRY' ENTERED AT 15:43:59 ON 07 FEB 2008

E WE43/CN

L1 1 S E3

FILE 'CAPLUS' ENTERED AT 15:55:43 ON 07 FEB 2008

=> s l1

L2 91 L1

=> d ti 1-91

L2 ANSWER 1 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Implants, especially stents with cholesterol or cholesterol-ester-containing coating

L2 ANSWER 2 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium alloy sliding parts with excellent wear resistance

L2 ANSWER 3 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Liquid quenching solid-solution treatment and age hardening for high-strength magnesium alloys

L2 ANSWER 4 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Absorbable magnesium alloy drug-eluting stent with multilayer controlled-release coatings, and its preparation method

L2 ANSWER 5 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical Performance Evaluation of Cast Magnesium Alloys for Automotive and Aeronautical Applications

- L2 ANSWER 6 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Friction stir processing of a cast WE43 Mg alloy
- L2 ANSWER 7 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Determination of an empirical law of aluminum and magnesium alloys absorption coefficient during Nd:YAG laser interaction
- L2 ANSWER 8 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI New magnesium alloys for transmission parts
- L2 ANSWER 9 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Elevated temperature alloys - paths for further performance gains in AE44
- L2 ANSWER 10 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Synchrotron x-ray microtomography study of the role of Y in corrosion of magnesium alloy WE43
- L2 ANSWER 11 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Experimental study of magnesium and aluminium alloys absorption and keyhole evolution during laser interaction Nd: YAG interaction
- L2 ANSWER 12 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mechanical properties of degradable magnesium implants in dependence of the implantation duration
- L2 ANSWER 13 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Study of magnesium and aluminum alloys absorption coefficient during Nd:YAG laser interaction
- L2 ANSWER 14 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mechanical spectroscopy of deformed WE43 magnesium alloys
- L2 ANSWER 15 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Comparative study on wear behaviour of magnesium and aluminium alloys
- L2 ANSWER 16 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Early stages of precipitation and microstructure control in Mg-rare earth alloys
- L2 ANSWER 17 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Magnesium casting alloy technology and application
- L2 ANSWER 18 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI DSC investigation on WE43 and Elektron 21 Mg alloys
- L2 ANSWER 19 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI New engine coolant for corrosion protection of magnesium alloys
- L2 ANSWER 20 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI A calorimetric study of phase evolution in a WE43 Mg alloy
- L2 ANSWER 21 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Influence of a silane treatment on the corrosion resistance of a WE43 magnesium alloy
- L2 ANSWER 22 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mono- and multi-layer magnesium alloys laser (ND:YAG) cladding using aluminum based powders

- L2 ANSWER 23 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Electrochemical behaviour of a magnesium alloy containing rare earth elements
- L2 ANSWER 24 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Implant for releasing an active substance into a vessel through which a body medium flows and use to implant drugs into blood vessels for the treatment of tumors
- L2 ANSWER 25 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Magnesium alloys laser (Nd:YAG) cladding with side injection of aluminium based powder
- L2 ANSWER 26 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Radio-opaque marker for medical implants
- L2 ANSWER 27 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Excimer laser surface treatment of magnesium alloy WE43 for corrosion resistance improvement
- L2 ANSWER 28 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Corrosion behaviour of laser-melted magnesium alloys
- L2 ANSWER 29 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The recrystallization behavior of AZ31 and WE43
- L2 ANSWER 30 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Texture evolution of five wrought magnesium alloys during route A equal channel angular extrusion: Experiments and simulations
- L2 ANSWER 31 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Comparative observation of the microstructure of Mg-Al-Zn and Mg-Y-RE-Zr wrought alloys
- L2 ANSWER 32 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Metallurgical background to the development of creep resistant gravity casting magnesium alloys
- L2 ANSWER 33 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Distribution of yttrium and neodymium in magnesium melts between metal and magnesium fluoride containing salt
- L2 ANSWER 34 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI In vivo corrosion of four magnesium alloys and the associated bone response
- L2 ANSWER 35 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Environment-assisted cracking of cast WE43-T6 magnesium
- L2 ANSWER 36 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Recrystallization behaviour of two magnesium alloys
- L2 ANSWER 37 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Significance of stable and metastable phases in high temperature creep resistant magnesium-rare earth base alloys
- L2 ANSWER 38 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Ignition resistance of various magnesium alloys

- L2 ANSWER 39 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Magnesium alloys (WE43 and ZE41) characterization for laser applications
- L2 ANSWER 40 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Effects of precipitation processes on damping and elastic modulus of WE 43 magnesium alloy
- L2 ANSWER 41 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Anodic oxide film formation at magnesium alloy WE43
- L2 ANSWER 42 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Magnesium alloys laser (Nd:YAG) cladding and alloying with side injection of aluminum powder
- L2 ANSWER 43 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Electrochemical Studies of AC/DC Anodized Mg Alloy in NaCl Solution
- L2 ANSWER 44 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Characterization of Oxide Films Formed on Mg-Based WE43 Alloy Using AC/DC Anodization in Silicate Solutions
- L2 ANSWER 45 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Hardening precipitation in a Mg-4Y-3RE alloy
- L2 ANSWER 46 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Application of plasma deposited organosilicon thin films for the corrosion protection of metals
- L2 ANSWER 47 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Effect of alloying elements on the ignition resistance of magnesium alloys
- L2 ANSWER 48 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mechanical properties of aged Mg-4Y-3RE alloy
- L2 ANSWER 49 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Improving the performance of Mg-rare earth alloys by the use of Gd or Dy additions
- L2 ANSWER 50 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Influence of ECAP on tensile properties of ZK 60 and WE 43 magnesium alloys
- L2 ANSWER 51 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Influence of rare earth elements and minor additions on properties and performance of magnesium-yttrium alloys in critical aerospace applications
- L2 ANSWER 52 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Tensile properties at room temperature to 823 K of Mg-4Y-3RE alloy
- L2 ANSWER 53 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Residual stress measurements using neutron diffraction in magnesium alloy laser welded joints
- L2 ANSWER 54 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Thin-walled Mg structural parts by a low-pressure sand casting process
- L2 ANSWER 55 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Effect of foundry processing on the corrosion performance of high purity magnesium sand casting alloys

- L2 ANSWER 56 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Precipitation processes in magnesium-heavy rare earth alloys during ageing at 300°C
- L2 ANSWER 57 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mechanical properties in structural magnesium alloys under dynamic tensile loading
- L2 ANSWER 58 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Equal channel angular processing of magnesium alloys
- L2 ANSWER 59 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Structural aspects of high performance Mg alloys design
- L2 ANSWER 60 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Laser welding of AZ91 and WE43 magnesium alloys for automotive and aerospace industries
- L2 ANSWER 61 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Creep of a heat treated Mg-4Y-3RE alloy
- L2 ANSWER 62 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Ductility enhancement in magnesium alloys under dynamic loading
- L2 ANSWER 63 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Superplasticity of a particle-strengthened WE43 magnesium alloy
- L2 ANSWER 64 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Grain boundary effects on the behavior of WE43 magnesium castings in simulated marine environment
- L2 ANSWER 65 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Precipitation reactions in two magnesium alloys containing rare earths
- L2 ANSWER 66 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI CO2 laser welding of magnesium alloys
- L2 ANSWER 67 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Factors affecting the corrosion performance of Elektron WE43 and WE54 magnesium casting alloys
- L2 ANSWER 68 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The effect of various quenchants and thermal cycle modifications upon the residual stress levels in Elektron WE43 castings after heat treatment
- L2 ANSWER 69 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Magnesium alloys in new aeronautic equipment
- L2 ANSWER 70 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The corrosion protection afforded by rare earth conversion coatings applied to magnesium
- L2 ANSWER 71 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Kinetics of the development of a nonchromate conversion coating for magnesium alloys and magnesium-based metal matrix composites
- L2 ANSWER 72 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Coated substrate and process for production thereof

- L2 ANSWER 73 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Microstructure/property relationships in two magnesium-rare earth alloys
- L2 ANSWER 74 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Experimental study of a structural magnesium alloy with high absorption energy under dynamic loading
- L2 ANSWER 75 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Development of WE43 magnesium alloy by thermomechanical treatment
- L2 ANSWER 76 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Investigation of the microstructure and properties of castable neodymium- and yttrium-bearing magnesium alloys at elevated temperatures
- L2 ANSWER 77 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Advances in the application of magnesium in helicopter gearcases
- L2 ANSWER 78 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI New magnesium alloys and protections in new helicopters
- L2 ANSWER 79 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Development of aerospace casting in WE43 poured by the DPSC process
- L2 ANSWER 80 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Mechanical properties and fluidity of magnesium cast alloys regarding their wall thickness dependence in sand and pressure die casting processes
- L2 ANSWER 81 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The development of Elektron magnesium alloys for aeroengines
- L2 ANSWER 82 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Elevated temperature behavior of rapidly solidified magnesium alloys containing rare earths
- L2 ANSWER 83 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The effect of heat treatment and composition on the microstructure and properties of cast magnesium-yttrium-rare earth alloys
- L2 ANSWER 84 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI New corrosion resistant wrought magnesium alloys
- L2 ANSWER 85 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The development of magnesium materials for aerospace and specialty applications
- L2 ANSWER 86 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The development of magnesium materials for aerospace and specialty applications
- L2 ANSWER 87 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI New corrosion resistant wrought magnesium alloys
- L2 ANSWER 88 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI Creep fracture in a magnesium-yttrium-rare earth alloy
- L2 ANSWER 89 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
 TI The effect of heat treatment and composition on the microstructure and properties of cast magnesium-yttrium-rare earth alloys

L2 ANSWER 90 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI A high strength, corrosion resistant magnesium alloy for aerospace castings

L2 ANSWER 91 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Localized corrosion initiation on magnesium alloys

=> d ibib abs 91

L2 ANSWER 91 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:64759 CAPLUS
DOCUMENT NUMBER: 118:64759
TITLE: Localized corrosion initiation on magnesium alloys
AUTHOR(S): Mitrovic-Scepanovic, V.; Brigham, R. J.
CORPORATE SOURCE: Met. Technol. Lab., CANMET, Ottawa, ON, K1A 0G1, Can.
SOURCE: Corrosion (Houston, TX, United States) (1992), 48(9), 780-4
CODEN: CORRAK; ISSN: 0010-9312

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Expts. were carried out to evaluate a critical go/no-go chloride concentration for

pit initiation in cast and wrought Mg alloys by placing coupons 38 by 38 mm in 100 mL test solution (0.1 M NaOH containing 0.005, 0.01, or 0.02 M NaCl)

to which 10 mL of 30% H₂O₂ was added in a tall, narrow 180 mL beaker to retain the sample in the near-vertical position. The coupons were exposed at room temperature for 24 h, and the corrosion products were removed with a solution of 20% CrO₃ plus 1% AgNO₃. The coupons were examined for pits on the flat surfaces away from the edges, and the percentage of coupons showing pitting attack was reported. The critical chloride concentration which causes pit initiation on a number of Mg alloys is 2+10⁻³-2+10⁻² M NaCl. Exfoliation is observed in unalloyed Mg above a critical chloride concentration,

but this morphol. is not seen in Mg alloys. Localized attack is observed only when the free corrosion potential adopts a value active to the H line.

=>